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ABSTRACT

This presentation reports on three waves of reform efforts for school effectiveness and improvement in Hong Kong, and analyzes related challenges and issues with the hope of drawing international implications for ongoing research and reform efforts in different parts of the world. These three waves represent paradigm shifts and different strategies in facing challenges and pursuing education effectiveness in changing local and international contexts. In the 1970s, the first wave emphasized internal effectiveness focusing on internal process improvement through external intervention or input approaches. In the 1990s, the second wave pursued interface effectiveness in terms of school-based management, quality assurance, accountability, and stakeholders' satisfaction. Research on the second wave often focused on interface improvement through various types of quality inspection and assurance. In facing the challenges of globalization, information technology, and the knowledge-driven economy in the new century, the third wave of school effectiveness and improvement in Hong Kong is moving towards future effectiveness. Research on the third wave is concerned with not only value-addedness but also value-createdness in school effectiveness through enhancing educational relevance and creating new goals. This paper discusses how the research conceptions and concerns of the third wave in school effectiveness and improvement are completely different from traditional thinking. Implications are discussed for future research. (Contains 39 references.) (Author/RT)

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Towards the Third Wave of School Effectiveness and Improvement in Hong Kong: Internal, Interface and Future

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Towards the Third Wave of School Effectiveness and Improvement in Hong Kong: Internal, Interface and Future

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Abstract

This presentation aims to report three waves of efforts for school effectiveness and improvement in Hong Kong and analyze the related challenges and issues with a hope to draw international implications for ongoing research and reform efforts in different parts of the world.

These three waves represent paradigm shifts and different strategies in facing up challenges and pursuing educational effectiveness in changing local and international contexts. Since the 1970s, the first wave emphasized on *internal effectiveness* with the focus on internal process improvement through external intervention or input approach. Assuming education goals be static, clear and commonly accepted, the research of first wave was mainly concerned with value-added in school effectiveness through improvement of teaching and learning. Since the 1990s, the second wave pursued the *interface effectiveness* in terms of school-based management, quality assurance, accountability and stakeholders' satisfaction. Assuming organizational adaptation and stakeholders' expectations be the core values of school effectiveness, the research in the second wave often focused on interface improvement through various types of quality inspection and assurance.

In facing the challenges of globalization, information technology, and knowledge-driven economy in the new century, the third wave for school effectiveness and improvement in Hong Kong is moving to pursue *future effectiveness*. Assuming that education goals are changing and should be relevant to the future, the research in the third wave is concerned with not only value-added but also value-created in school effectiveness through enhancing educational relevance and creating new goals. This paper will discuss in detail how the research conceptions and concerns of the third wave in school effectiveness and improvement are completely different from the traditional thinking. Implications will be drawn and discussed for future research.

Three Waves in the International Contexts

As an international city and an open society, Hong Kong has been echoing the international trends of education change and reform in different part of the world, particularly the movements in Western societies like Australia, UK, and USA. According to Cheng (2001a), the world-wide education reforms are experiencing three waves since the 1970s. The three waves of reforms are mainly based on different paradigms and theories of education effectiveness, and they result in the employment of different strategies and approaches to changing schools and education. These international movements should be taken as an important reference for us to understand, review, and discuss the education reforms in Hong Kong.

Assuming goals and objectives of education are clear and consensus to all, the first wave of school reforms and initiatives since the 1970s focuses mainly on *internal effectiveness*, with efforts made to improve internal school performance particularly the methods and processes of teaching and learning. Many changes are government-directed and top-down, with the aim to improve school arrangements and education practices, thus enhancing their effectiveness in achieving the goals and objectives planned at either the site level or the system level. Improvement of teacher and student performance up to identified standards obviously had been a popular and important target for educational reform.

Responding to concerning the accountability to the public and stakeholders' expectation in the 1990s, the second wave of education reform emphasizes *interface effectiveness* in terms of education quality, stakeholders' satisfaction, and market competitiveness, with most policy efforts aim to ensure quality and accountability to the internal and external stakeholders. Quality assurance, school monitoring and review, parental choice, student coupon, parental and community involvement in governance, school charter, and performance-based funding are some typical examples of measures to pursue and enhance effectiveness at the interface between the school and the community (Cheng & Townsend, 2000). How to improve the existing structures, organizations, and practices in education at different levels to meet stakeholders' needs and expectations, is a major concern in the second wave of reforms.

At the turn of the new century, the effects of many initiatives of the first and second waves have been doubted whether they can meet the challenges and needs of rapid transformations in an era of globalization and information technology. Particularly when knowledge economy and information technology are strongly emphasized in the new millennium, people urge paradigm shift in learning and teaching and demand reforming the aims, content, practice, and management of education at different levels to ensure their relevance to the future (Cheng, 2000a, b). The emerging third wave of education reform emphasizes strongly *future effectiveness* in terms of relevance to the new education functions in the new century as well as relevance to the new paradigm of education concerning contextualized multiple intelligences, globalization, localization and individualization**. The pursuit of new vision and aims at different levels of education, life-long learning, global networking, international outlook, and use of information and technological are just some emerging evidences of the third wave (Cheng, 2001a).

In the third wave, education reforms move towards triplization in learning, teaching, and schooling with the help of the information technology and boundless multiple networking. Triplization refers to the process including globalization, localization and individualization. Through globalization in education, reform initiatives aim to maximize the global relevance and bring in the intellectual resources and support in schooling, teaching, and learning from different parts of the world. International exchange programs, Internet-based or website-based learning, video-conferencing, and international collaborative learning and teaching projects are typical examples. Through localization, education reforms can maximize the local relevance, community support and resources in schooling, teaching, and learning. Community and parental involvement, school-based management, and community-related curriculum are some examples of localization in education. Through individualization, it is to maximize motivation, initiative, and creativity of students and teachers in schooling, teaching, and learning through such measures as individualized education programs; individualized learning targets, methods, and progress schedules; and encouraging students and teachers to be self-learning, self-actualizing, and self-initiating. In sum, the new paradigm of third wave aims to achieve unlimited opportunities and multiple global and local resources for life long learning and development of both students and teachers.

The above three waves of education reforms provide a general typology to capture and understand the key paradigms and characteristics of various education reforms in international contexts in these years. Different countries or areas may have different historical and contextual constraints, and therefore their progress and characteristics of education reforms may be different and move towards different waves. For example, some countries may be still struggling for internal effectiveness at the first wave with focus mainly on improvement of internal process. Some countries may move towards the second wave or a mix of the first and second waves to pursue both internal and interface effectiveness. In addition to the internal improvement of school process, they implement different measures and initiatives to ensure education quality and stakeholders' satisfaction. Responding to the challenges of globalization and impacts of information technology, some countries may have already started the third wave of education reforms to pursue for future effectiveness with emphasis on relevance of education to new school functions and new paradigm of learning in the new millennium.

As an international city, Hong Kong is inevitably exposing itself under the impacts of these three waves of education reforms in such an international context. We would like to know where education reforms in Hong Kong are going or should be going: Second wave? Third wave? Or what ever? With reference to these world-wide three waves, this paper aims to provide a deeper analysis and review of educational change and development in Hong Kong with a hope to draw some important implications for Hong Kong and other parts of the Asia-Pacific region in education reform for the future.

The Hong Kong Context

In the 1960s and 1970s, Hong Kong, as a small British colony geographically and economically close to the socialist China, and operated in a relatively special and stable political environment, strived to achieve a steadily growing economy through developing its manufacturing industries and regional and China trades. Since the late 1970s, with the implementation of compulsory education, the school system expanded quickly in both primary and secondary education in order to meet the challenges from a rapid economic

growth. In the past two decades, after the drastic expansion of the school system and the transition of Hong Kong from a predominantly labor intensive manufacturing economic system to an international financial and business center, Hong Kong people in the 1990s have shifted their attention and effort on the provision of school education from quantity to quality and from increasing resources inputs to enhancing effectiveness.

Particularly in the past ten years, the Hong Kong society has been experiencing numerous challenges of a great transformation due to the fast economic developments in the Asia-Pacific area and due to the political transition in July 1997 from a British colony to a Special Administrative Region (SAR) of China. Policy-makers and the public had new and high expectations of the role and functions of school education (Cheng, 2000a).

In this context, a number of educational policies for educational change had been initiated. From 1984 to 2000, the Education Commission published seven reports (Education Commission, 1984-1997), review reports, and reform proposals (Education Commission, 1999 a & b; 2000, May & September).

The line of thinking and strategies adopted in Report No. 7 and some latest initiatives (e.g., Education Commission, 1999 a & b; 2000, May & September) are contrastingly different from those in the previous reports. Cheng (2000a) classified reports No. 1 - 6 (Education Commission, 1984-1996) and other earlier policy reports as the source of policy initiatives of the first wave reform. The policy recommendations in report No. 7 (Education Commission, 1997) and the new developments initiated by the Hong Kong SAR Government since 1997 are the key components of the second wave of educational reforms in Hong Kong. In the past three years (1997-2000), the formulation of the second wave of reforms have raised some important concerns for better education among the wider public but at the same time the strategies so formulated, as well as their implementation, have been confronting serious difficulties and challenges in conceptualization and operation. To a great extent, these two waves share similar nature and characteristics as those in the international contexts aforementioned. This paper will review the major issues in the first and second waves of education reform, and then underscore the necessity of Hong Kong education moving towards the third wave in coming few years.

The First Wave in Hong Kong

The first wave of educational changes and developments in Hong Kong had its root in the assumption that the policy-makers have clear education aims and could find out the best practices to enhance effectiveness or the optimal solutions to solve major problems for all schools at the school-site level. They were generally characterized by a top-down approach with an emphasis on external intervention or increasing resources input and with a focus on merely certain aspects of educational practice. In reports No. 1 to 6, the policies which were directly related to efforts for educational changes and developments in schools included the following areas: Language Teaching and Learning, Teacher Quality, Private Sector School Improvements, Curriculum Development, Teaching and Learning Conditions, and Special Education.

Some of those policies proposed by the Education Commission have been implemented, while some are still being carried out very slowly, if not suspended, due to the lack of financial support or the challenges from the public. Then, results of some

implemented policies seemed not so encouraging, in terms of the impacts upon improvement in school education. Cheng (2000a) pointed out that the effects of the first wave policies on school improvement were limited and they suffered from ignorance due to the following drawbacks:

Lack of a Knowledge Base and Research Support: Policy-making should be supported by substantial research findings or empirical pilot tests (Cheng & Cheung, 1995). Unfortunately, it is often not the case in Hong Kong, because there had been a lack of policy-related research, as well as an absence of the tradition of using research findings in policy-making. Therefore, the education policies so formulated often faces serious challenges and criticisms from the public or the people concerned. In the past few years, even though some studies had been initiated by individual scholars or committees to support or test some of the educational policy efforts, they were still too few and limited when compared with the large number of policies and the huge investment into educational reforms and improvement.

Ignorance of School process: In the first wave, assuming that more input would result in more effective schooling, the proposed policies focused mainly on allocation of resources into schools, but did not know, if not ignored, how the inputs would be transformed into the school process to generate intended outcomes. Therefore, the contribution of the policies to practice improvement was often nominal. The over-emphasis on the input enlargement approach to effectuating educational reform has the root in political considerations and a poor understanding of educational change and effectiveness. In order to overcome this drawback, a substantial research-based conceptual framework should be established to link up the potential inputs, processes, and outcomes of a policy when it is developed for school improvement (Cheng & Cheung, 1995).

Ignorance of School-based Needs: Most of the policy efforts in the first wave often assumed high homogeneity among schools, ignored their school-based unique features and needs, and gave them similar policy treatment for improvement. Obviously, this assumption is simplistic and cannot reflect the complex reality; as such, the policy treatment based on this assumption is likely to be effective only to some schools but not all. In most policies of the first wave, the unit of educational reform for improvement was often the piecemeal school practice or resource input (e.g., providing one extra teacher for remedial language teaching in each school). Rarely could one find in the policies the recognition of the difference in effectiveness between schools and the taking of the school as the unit of change to initiate school improvement policy.

The first wave reforms focused on improvement of internal process and pursued internal effectiveness. Unfortunately, without substantial research support, the feasibility, acceptability, and effectiveness of first wave reforms were often in big problems and challenged by the public and educators when they were implemented. Based a top-down approach and ignored school process and school-based needs, the policy effects of the first wave reforms were quite limited and fragmented.

The Second Wave in Hong Kong

The Education Commission Report No. 7, *Quality School Education* (1997) and the recent initiatives of the Hong Kong SAR Government since 1997 formed the major

part of the second wave of education reforms. While most initiatives are still at the early stage of implementation, the main characteristics of the second wave reforms planned can be summarized as follows (Cheng, 2000a):

School-based Approach: Following the international movements of school-based management, the conception of change has been shifted from the traditional external intervention to the school-based approach which emphasizes school-based initiatives and takes the school as the unit of change and improvement (Cheng, 1996b). Assuming that schools are not homogenous in goals, practice, and effectiveness, the changes are to be rationally induced to meet each school's own needs and characteristics.

Bottom-up Approach: Consistent with the spirit of school-based approach, the bottom-up approach is strongly emphasized in the second wave. School principals and teachers who are at the frontiers of educational practice are to play the key role to lead and to introduce changes and developments for enhancing educational effectiveness and quality, particularly in their own classrooms and schools and eventually the whole education system.

Quality Assurance and Accountability: Parallel to decentralization and school-based management, quality assurance and accountability to stakeholders were strongly emphasized. This is based on the theory of tight-loose coupling that, on the one hand, schools are given more autonomy and flexibility to use public resources and manage their activities more effectively and, on the other hand, all this autonomy and self management should be within a given framework of accountability (Cheng, 1993c and 1996b). Therefore, school development planning, school monitoring and evaluation, quality assurance inspection, school performance reports to the public, parental and community involvement in school governance, and benchmarking in performance have become typical measures to ensure quality and accountability.

Awareness of the Need of Research: Different from the first wave, policy-makers are more aware of the use of knowledge and research to support policy discussion and formulation and to improve educational practice. In the review of educational aims and systems, a strategy has been claimed to draw reference from local and international experiences and research findings for policy discussion and decision-making even though the using of research is still very limited in practice. Particularly, policy-makers are so eager to make proposals to change the whole education system and thus they have no time to wait for any research findings. Some school practitioners gradually paid attention to the use of action research or different types of monitoring and evaluation to improve professional practices.

Future Outlook: Due to impacts of the economic downturn in the Asia-Pacific region since 1997 as well as globalization in economy, whether education can meet the upcoming challenges to individual and societal developments in the new century has been a key concern of ongoing educational reform. Future outlook has become one of the critical features of educational reviews and reforms for ensuring that all new initiatives are relevant to the future of Hong Kong as an important international center for economy and business in the Region and the world. This concern is in fact reflecting the needs to pursue future effectiveness and move towards the third wave.

The second wave of education reforms in Hong Kong shares some important

features of the international second wave with strong emphasis on the interface effectiveness in terms of quality assurance, stakeholders' satisfaction, accountability, and school-based management. It is also requesting deeper understanding of the complicated nature and needs of stakeholders at the interface of schools, the relationship and accountability of school process and outcomes to the community, the diverse school-based characteristics and needs, and the relevance of all educational practices to the future of Hong Kong and its new generations in the new millennium. Inevitably, research and knowledge base become more and more crucial and necessary in current Hong Kong educational reforms. In the next sections, we will briefly introduce these reforms and then analyze the difficulties and problems emerging in this second wave of reforms.

Initiatives and Strategies in the Second Wave

The School-based Management

Transforming all public schools towards school-based management is one of major recent initiatives. In 1991, the Education and Manpower Branch and Education Department of the Hong Kong Government initiated a new scheme, called "School Management Initiative" (SMI), to induce a type of school-based management framework to all public sector schools. This initiative was quite different from the first wave tradition of past policies initiated by the Education Commission. In the past few years, the number of schools participated in the SMI scheme has increased from 21 secondary schools in 1992 to 148 secondary, 199 primary, and 18 special schools in 1997. The total number was around 30% of the school population (around 797 primary schools, 448 secondary schools, and 73 special schools in Hong Kong). More and more school principals, teachers, and supervisors accepted the ideas and principles of school-based management. Witnessed is a clear diffusion of SMI ideas, concepts, skills, and experiences from pilot SMI schools to new SMI schools and from SMI schools to non-SMI schools (Cheng & Cheung, 1999). With the strong evidence of positive effects of SMI, the Education Commission in 1997 had required all Hong Kong public sector schools to implement school-based management by 2000 (Education Commission, 1997). In February 2000, the Advisory Committee on School-based Management published a consultation document to ask for strengthening the role, structure, and governance of school management for accountability in the transition towards school-based management. There has been a hard negotiation process between the school sponsoring bodies and the Government in restructuring the existing school governance that is heavily relying on volunteer school sponsoring bodies.

Report No. 7: Quality School Education.

It seemed to be a long way for the Education Commission to recognize the drawbacks of the first wave strategies and adopt a school-based approach to educational reforms. In 1997, Education Commission in its Report No. 7 recommended the following:

1. Schools should be facilitated to set goals and indicators for monitoring and evaluating quality education;
2. All schools should have put in place school-based management in the spirit of SMI by the year 2000 as the internal quality assurance mechanism;
3. Education Department adopts a whole-school approach to quality assurance inspection and sets up a quality assurance resource corner;
4. All schools which have put in place school-based management should enjoy the management and

funding flexibility under the SMI;

5. Government should set aside a substantial amount of money to establish a "Quality Education Development Fund" to fund one-off projects for the improvement of education quality on a competitive basis; and
6. Government should raise professional standards of principals and teachers through providing coherent pre-service and in-service training and setting up a General Teaching Council, and all schools should be required to put in place a fair and open performance appraisal system for principals and teachers.

These policy recommendations are indeed very different from those presented in the previous reports. They have adopted the school-based approach to establish a more comprehensive mechanism for quality assurance and school effectiveness.

New Hong Kong SAR Government's Initiatives

After the handover of sovereignty in 1997, the new Hong Kong SAR government has then made its great effort to analyze Hong Kong's new role, define its positioning in the Region and international communities, and plan long-term developments for the future of Hong Kong in the coming new century. The significance and values of quality education to the future of Hong Kong are well appreciated by the first Chief Executive of the Hong Kong SAR, Mr. Tung Chee-hwa (Tung, 1997a, b). He presented in his policy address in 8 October 1997 an important blueprint for the educational development of Hong Kong in the new century. The policy address revealed great determination to review and reform different levels and different aspects of the school system to face up challenges and competitions in the new century. It supported the measures proposed by the Education Commission Report No. 7.

It set a time schedule to review and streamline the education-related executive and advisory structure. It also asked the Education Commission to conduct a thorough review of the structure of pre-primary, primary, secondary, and tertiary education, as well as the school curriculum and examination system, while the Board of Education had at the same time completed a review of 9-year compulsory education (Board of Education, 1997).

Since the delivery of the policy address in 1997, a number of reviews of and initiatives on teacher education and principal training, educational aims, information technology, Education Department, and Quality Education Fund have been conducted or introduced. The following paragraphs summarize some key progress of these developments.

Review and Initiatives on Teacher Education and Principal Training

In accordance with the new SAR Government policy on enhancing teacher quality, both the Advisory Committee on Teacher Education and Qualifications (ACTEQ) and University Grants Committee (UGC) of the Hong Kong SAR Government started to review in 1997 the existing in-service and pre-service teacher education in Hong Kong, respectively. They finished their reports in January and February 1988, respectively, and submitted them to the Government. In order to meet the policy needs, proposed in the reports are strategic suggestions to the development of teacher qualification in the near future. The following directions for teacher education will be in focus for policy formulation:

1. *All Trained.* All untrained in-service secondary and primary school teachers must complete the necessary basic professional education within ten years.

2. *All Graduate.* Non-graduate in-service teachers are encouraged to study for a degree; in the long run, all graduate teaching profession can be achieved in Hong Kong.
3. *All Continuing Professional Development* All in-service teachers should be encouraged to take professional training or development courses; in the long run, continuing professional education will become a prerequisite for the career development of teachers and principals.
4. *Time Frame for All Trained All Graduate.* In around five years, all new teachers should have degrees and in around 10 years all teachers should have received professional training.
5. *Key Role of the Hong Kong Institute of Education* (HKIED). The HKIED continues to play a key role on teacher education for primary teachers, pre-school teachers, cultural technical subject teachers, language teachers, and in-service teacher's professional development.
6. *Attract High Quality People as Teachers.* Measures, for example, for increasing more degree programs for teacher education, should be adopted to attract high quality secondary school graduates and university graduates to receive teacher education and take up teaching as their career.
7. *Quality of Teacher Educators.* It is necessary to enhance the staff quality of teacher education courses and strengthen their knowledge of the local situation of school education.
8. *Relevance of Teacher Education.* It is also important to improve the suitability and relevance of the content of teacher education to school education and to strengthen the co-operation between school practitioners and teacher education institutions.
9. *Attraction of Teaching Force.* Measures, for example, for enhancing the image and status of the teaching profession and improving the teaching environment, should be adopted to increase the attraction of teaching force.

With recognition of the importance of school principals' new leadership and role to quality education and effective implementation of educational changes and school-based management, the Education Department set up in January 1999 the Task Group on Training and Development of School Heads. It aimed to draw up a framework for a leadership training program for school principals. After the visits to England, Scotland, Australia, and Singapore to investigate the related training programs, this group completed its study and proposed a program for principal leadership training and development (Task Group on Training and Development of School Heads, 1999).

Review of Education System and Aims and New Proposals

In January 1999, the Commission had produced a document on aims of education for the new century for public consultation (Education Commission, 1999 January). It outlined the Visions and Aims for the early childhood education, school education, and tertiary education. In September 1999, the Education Commission had issued its second consultation document on the framework for educational reform. In May 2000, the Education Commission further published its third consultation document on proposals for reforming the whole education system from early childhood education to tertiary education and continuing education. After consultation, the Commission published its reform proposals in September 2000. In setting the direction and formulating the proposals for reform, the Commission claimed to adopt the principles including student-focused, "no-loser," quality, life-wide learning, and society-wide mobilization. The focuses of the whole reform package are on the following:

1. Reforming the admission systems and public examinations so as to break down barriers and create room for all;
2. Reforming the curricula and improving teaching methods;
3. Improving the assessment mechanism to supplement learning and teaching;
4. Providing more diverse opportunities for lifelong learning at senior secondary level and beyond;
5. Formulating an effective resource strategy;
6. Enhancing the professionalism of teachers; and
7. Implementing measures to support frontline educator

In the document, there are a number of specific proposals to put the principles and focuses into practice. Since the proposals covered a wide range of crucial issues and large-scale changes, they have raised a lot of debates. Even though the directions and principles of educational reforms proposed are generally welcome by the public, how and why these proposals and recommendations can be effective to serve the principles of educational reforms and new aims of education in practice remains a major concern among the public. Particularly without clear research evidence and sound knowledge base to support these proposals, it is really difficult to convince the public or educators that they are feasible, effective, and practical in implementation.

Review and Change of Curriculum.

Echoing the new education aims, principles and proposals of reform proposed by the Education Commission in 1999 and 2000, the Curriculum Development Council published its proposals on curriculum change and development in November 2000 for consultation. In this report, it has proposed some guiding principles in planning a new curriculum framework that aims to provides schools with a structure for outlining and developing different curriculum modes. It is hoped that, with this framework, the teaching contents can be flexibly rearranged, modified or replaced in response to the needs of society and to suit the different needs of students. The key components of the curriculum framework includes eight Key Learning Areas (the bases for knowledge building - also a platform to enhance cross-subject cooperation and facilitate students to "learn how to learn"), Generic Skills (for helping students to learn how to learn, such as collaboration skills, critical thinking skills, problem-solving skills, communication skills, information technology skills, self-management skills, creativity, numeracy skills, and study skills), and Values and Attitudes (nurturing of students' personal dispositions, through the related topics and learning targets in the eight Key Learning Areas). The council has also proposed a beyond ten-year schedule for implementing curriculum reform: short-term strategies (2000-2005), medium-term strategies (2005-2010), and long-term strategies (2010 and beyond). In the short-term development, it is expected that:

- Based on the principles of the curriculum reform, the Education Department will develop new curriculum guides, subject guides and exemplars, and teaching/learning materials; engage in research and development projects and disseminate good practices.
- Teachers and schools can promote learning to learn through infusing generic skills into existing school subjects.
- The following key tasks have been shown to be useful strategies for promoting learning to learn: Moral and Civic Education, Promoting a Reading Culture, Project Learning and Use of Information Technology
- Schools can prepare for the transition to the new curriculum framework and gradually develop a school-based curriculum, using the new framework to suit the needs of students and schools.

In the medium-term development, Schools should have followed the central directions and used the curriculum guides of the open framework provided to develop a school-based curriculum most suited to the abilities and needs of students and the mission of the schools. They should continue to raise their quality of teaching and learning. And finally, in the long-term development, the vision for lifelong learning can be achieved. This curriculum framework is still in hot debate. Particularly many people are concerned with its feasibility and effectiveness.

Promoting Information Technology in Education

In facing the challenges of transformation of traditional economic system to high technology and high value-added industries in a new era of globalization and information, there is a pressing need to promote information technology (IT) in education for improving teaching and learning and equipping the young people to meet all those challenges.

In 1997, the SAR Government announced that $2,880 million in capital cost and $260 million in annual recurrent cost will be allocated to the implementation of a series of IT initiatives. These initiatives include about 65,000 computers for primary and secondary schools; over 45,000 training places for teachers; Internet access for all schools; a pilot scheme in 10 primary and 10 secondary schools, and preparations for an education-specific Internet (Education and Manpower Bureau, 1998a, p. 27). Then, the Government proposed in 1998 a further set of initiatives at an additional capital cost of $334 million and annual recurrent cost $294.5 million. In November 1998, the Education and Manpower Bureau (EMB) of the Hong Kong SAR government had published its policy paper, " Information Technology for Learning in a New Era," to outline a five-year strategy (1998/99-2002/03) for promoting IT in education, with the missions as follows: (1) To provide adequate IT facilities, including network facilities, for our students and teachers to enable them to access information; (2) To encourage key players in the school system to take up the challenges of their respective new roles (This is particularly important with regard to teachers); (3) To integrate IT into school education meaningfully through necessary curriculum and resource support; and, (4) To foster the emergence of a community-wide environment conductive to the culture change (p. 2-3).

All these commitments reflect the Government's great determination to pursue education development through information technology initiatives. From the past experiences of educational reforms, mere large scale resources input and training are not sufficient to bring effective changes and outcomes in the classroom and at the school level. How the school management and professional culture can match the huge investment in IT hardware and training, and transform them into effectiveness, quality, and relevance in education at the site and individual levels is still a challenging question to the reformers of IT in education in Hong Kong.

Review and Restructuring of Education Department

As similar in other school reforms towards school-based management in different parts of the world, such as Australia and New Zealand, the traditional role and effectiveness of the Education Department of the Hong Kong SAR government are inevitably in challenge by the public. The present role of Education Department, a huge central bureaucracy, has been changing as much authorities, as well as resources, are being channeled to the school level to encourage flexibility in using resources, self management in decision-making, and effective practice for quality education (Cheng, 1996b).

After the policy address in 1997, the SAR government had appointed a management consulting firm to conduct a review of organizational and management structure of the Education Department, with the final objective to "enable it to function more efficiently, effectively and responsively in its mission to provide quality education" (Education and Manpower Bureau, 1998b). The final report on the review was issued in July 1998 for public consultation. The report has made some recommendations to

change and streamline the structure and organization of the Education Department. With the results of this review and consultation, the Education Department has initiated some internal changes towards more professionalism to support school education. Up to now, it is still too early to say whether there are really structural and cultural changes in such a large central bureaucracy. Even so, how to restructure this Department effectively to meet the needs of current educational reforms is clearly an important issue for research in these few years.

Promoting School-based Initiatives through Quality Education Fund

As one of major policies to encourage school-based innovations and initiatives for promoting the quality of education, the SAR Government established the Quality Education Fund (QEF) on 2 January 1998 with an allocation of $5 billion. QEF mainly supports worthwhile non-profit-making initiatives for basic education, including pre-primary, primary, secondary, and special education. A QEF Steering Committee was set up under the Education Commission to advise on the policies and procedures regarding the operation of QEF. Also, an Assessment Sub-committee and a Promotion and Monitoring Sub-committee have been set up to assist the QEF Steering Committee in administering the Fund.

Generally, a wide range of projects that can promote quality education in schools can be funded by QEF. They include projects promoting the quality of teaching and learning in schools; projects promoting all-round education; school-based management projects; and educational research. In assessment, all QEF projects should "fall within the scope of QEF and be able to meet its objective to enhance quality school education; be mainly undertaken in Hong Kong; and not carry any recurrent financial implications on the QEF beyond its own project duration" (QEF, 1998, p. 3).

Of course, it is still a long way to generate and accumulate from the numerous school-based initiatives a comprehensive knowledge base that can support all types of effective practice of school education at different levels in Hong Kong. It is expected that after a few year of experiment and implementation, there may be more evidence to show whether a bottom-up approach can make a difference in collaboration between research and practice and then in quality education in Hong Kong schools.

Challenges to the Second Waves

The education environment in Hong Kong has been changing very fast even in just three years. The second wave of Hong Kong education reforms witnessed in these few years has been passing in a high speed too. To a great extent, it has carried the similar characteristics of the international second wave with great emphasis on education quality, accountability and stakeholders' expectations and needs. It is also clear that there is a strong aware of future relevance in the reform even though how the reform proposals and strategies are related to the achievement of future effectiveness in education is still unclear and controversial.

Since the life cycle of the second wave is still short, all the major proposals for reforms are still at the beginning development stage. It is too early to document any policy effects. Particularly, even though the new vision and aims of education are so attractive and encouraging, many recommendations are still broad guiding principles or general education ideas without any concrete implementation plans or strategies. Even

some specific proposals have been proposed (e.g., language benchmark tests for language teachers and language media of instruction), most of them have become very controversial and attracted serious criticisms. Many ongoing debates are mainly based on personal opinions, different party interests, or political concerns, without any sophisticated analysis or concrete research support. When compared with the huge scale and scope of education reform, the knowledge base for policy discussion and formulation appeared so thin and powerless.

This paper has no intention to analyze the strengths and problems of individual policy initiative in current education reforms in Hong Kong. But, it would point out some fundamental challenges and constraints that are tightly restricting the development and success of the ongoing second wave in Hong Kong. As shown in Table 1, there are five major categories of constraints including intelligent constraints, structural constraints, social constraints, political constraints, and cultural constraints. Among them, intelligent constraints should be crucial as they seriously limit the possibility to redress other types of constraints. In other words, if there are less intelligent constraints, the change agents or policy-makers can have better "intelligent power" or clear ideas, knowledge, and strategies to overcome the other constraints. Due to the length limit of this report, we will discuss the intelligent constraints in detail. Given the discussion of these drawbacks and constraints is really crucial for ongoing reforms in Hong Kong, it is hoped that in another paper later, we may analyze all these constraints in detail. (Cheng and Chan [2000] also provide an interesting example of applying multiple perspectives to analyze the case of school-based management in Hong Kong.)

Currently, Hong Kong is reforming its whole education system from pre-education to tertiary education and continuing education. The scope of reform is so huge and the nature of change is so fundamental that a strong and comprehensive intelligence system is really needed to support such a large scale reform as well as numerous related initiatives at different levels of the education system, at different stages of development, implementation, and practice. But unfortunately, there is an absence of such an intelligence system. Particularly, the development of current reform is suffering from a number of intelligent constraints.

Lack of Research and Knowledge Base. Even though there is an intended strategy to use research to inform policy-making, including, for example, the strategies as outlined in the Education Commission Report No. 7 (1997): "draw reference from experiences and research materials in and outside Hong Kong; research into specific issues related to the review." Recently, this emphasis is again repeated when the Education Commission reviewed education aims and formulated the blueprint of education reforms in 1999 and 2000. Unfortunately, in practice, however, research-based policy development is still a rarity and luxury in Hong Kong. In the second wave, the Education Commission had a very tight time in just one to two years but had to review the whole education system and make numerous recommendations. What kind of research and knowledge can they expect except their own experiences and ideas as well as some overseas experiences without rigorous analysis? It is not a surprise that there is lack of a comprehensive and relevant knowledge base to support policy development and implementation even though the reform is so large scale and influential.

Lack of Critical Mass of Intelligence. Hong Kong is a small place with around 6.8 million population. While there are eight tertiary institutions, only four have faculties

or departments of education. The Hong Kong Institute of Education has 400 academic staff and the other three institutions have a total of around 160 academic staff. These numbers are in fact not very large when compared with the numerous areas of education from the kindergarten to tertiary levels, with the scope and scale of ongoing education reforms. In other words, there may not have the critical mass of education expertise in each area to provide the necessary intelligence and knowledge base to support reform even if all of them may be motivated and involved in the reform.

Table 1: Potential Constraints and Drawbacks in the Ongoing Second Wave

Intelligent Constraints/ Drawbacks:	**Structural Constraints/ Drawbacks:**	**Social Constraints/ Drawbacks:**	**Political Constraints/ Drawbacks:**	**Cultural Constraints/ Drawbacks:**
Lack of Research and Knowledge Base for Reforms at Different Levels	• Unclear Leadership and Role in Reform	• Losing Confidence and Trust in Education and the Profession	• Over-driven by Public Media and Political Concerns	• Losing Meanings and Beliefs in Local Education
• Lack of Critical Mass of Researchers and Experts to Support Reforms in Different Areas	• Lack of Full Time/High Quality Professional Teams as Think Tank and Change Agent	• Lack of Commitment and Satisfaction with Reforms	• Lack of Strong Alliances in the Profession to Support Reform	• Lack of Understanding of and Commitment to New Paradigm of Education
• Part-Time Intelligence in Policy-making	• Part-time and Diverged Leadership in Reforms	• Increasing Stress and Criticism on Schools and Teachers	• Self-defense to Reduce Loss in Changes	• Lack of Cultural Leadership at Different Levels for the Reform
• Piecemeal and Repeated Intelligence and Knowledge in School-based Development • Diluting Intelligence in the Teaching Profession	• Unknowing the Existing Strengths and Building from Beginning • Losing Quality People in Teaching Profession and Unstable Education Department	• Uncertain and Anxious about their Roles and Responsibilities • Overburdened with Existing Workload and New Initiatives	• Mutual Blame for Failures • Making more Enemies than Alliances in Reforms • Too Many Fires to Threaten Schools and Teachers	• Creating Inconsistent & Conflicting Messages to Dilute the Meanings and Vision of Reforms • Lack of Positive Images and Signals to Stimulate the Morale of Teachers • Destroying the Existing Self Beliefs
• Disappearing Bureaucratic/Technocratic Intelligence	• Disappearing Bureaucratic Role and Responsibility	• Losing Trust in the Bureaucracy and Reform	• Losing Legitimacy due to the Failure of Previous Reforms	• Losing Trust in the Espoused Direction of Reform
• Lack of **Intelligence Platforms** at both the School and System Levels: Ignorance, Repeated Failure, Learned Incompetence and Helplessness	• Lack of Sophisticated **Operation Platforms** at both School and System Levels: Inconsistencies, Gaps, and Hindrance	• Lack of Optimistic and Encouraging **Social Platforms** for Schools and Teachers: Disengagement, Frustration, and Anxiety	• Lack of **Politically Safe Platforms** for Innovation: Resistance, Conservation, and Self-defense	• Lack of **Cultural Platforms** for Communication: Misunderstanding, Mistrust, and Poor Morale

Note: The detailed discussion of Structural, Social, Political, and Cultural Constraints will be presented in another paper

Unfortunately, there is also the absence of any centrally established research institute to coordinate these research and expertise forces that are now separated and working in different institutions without any coordinating framework. Furthermore, there

are no full time educational researchers in Hong Kong. Nearly all academic staff in education in Hong Kong tertiary institutions have major teaching role in teacher education programs. Therefore, it is not a surprise that in many important areas, there is still *lack of a critical mass* of researchers to generate knowledge and support reform and practice at different levels.

Part-Time Intelligence in Policy-Making. Now, the advisory committees in education have involved many tertiary scholars, school practitioners, and community leaders as members to contribute advices and ideas to policy development and formulation. Chairmen of key advisory committees are often business or non-education leaders appointed by the Government. This arrangement was a tradition to encourage wide participation and input to policy-making. But in these years, the scope and nature of education reforms are so complicated and changing so fast. All these committee works are becoming very challenging, and demanding even far more than full time commitment; particularly, most members are successful leaders who may have already several, if not many, other important and substantial commitments in addition to their full time job. From this point, we can see that the policy making of such a large scale reform is in fact using and also led by "*part-time intelligence*," if not "bounded intelligence."

Piecemeal, Thin, and Repeating School-based Intelligence. Since implementation of school-based management or school self-management, schools are assumed to develop, manage, and innovate by themselves. Nearly every school has to scratch from beginning to accumulate their knowledge and intelligence particularly when they want to make any school-based changes or innovations such as using information technology in education. For example, with the support of QEF, many schools in Hong Kong develop their multi-media materials and software for teaching and learning. Even though many teachers are very committed and spend a lot of time to learn, prepare, and produce the materials, unfortunately, the quality of materials is not so good and the technology and knowledge they use and accumulate are so thin, piecemeal, and repeating other people's effort. It is so ineffective and sad if teachers' scarce time and effort are used in such a way, because there is lack of central intellectual and material resources platform to support and provide all these materials.

Diluting Intelligence in the Profession. In the past decade, there has been brain drain from Hong Kong to other countries due to the political transition from the British colonial government to a SAR of China. Many experienced and quality teachers and educational professionals migrated overseas. Furthermore, due to the implementation of many new education initiatives and the establishment of Curriculum Development Institute and The Hong Kong Institute of Education, many top quality teachers were selected away from the teaching profession. All these in fact are diluting the intelligence and quality of the teaching profession that are necessary to implement innovations at the school level and ensure teaching quality in the classroom.

Disappearing Bureaucratic Intelligence. Since the 1990s, the leadership of the Education Department has changed frequently from a few months to two or three years while the staff have been repositioned to different offices very often. The bureaucratic or technocratic intelligence that had been accumulated slowly in the past years at the Education Department is disappearing quickly due to the fluid personnel and frequent changes in leadership. Without this bureaucratic intelligence, the development and implementation of new initiatives become more ad hoc, unstable, and unreliable and

often ignore some important ecological relations in the policy environment. Following the implementation of school based management, what the new role of the Education Department is has become a very crucial and controversial issue in the current education reforms.

Lack of Intelligent Platforms. From the above intelligent constraints, we can see that Hong Kong is lacking sophisticated intelligence platforms at both school and system levels that can support formulation and implementation of education reforms in the second wave. Without these platforms, it is not a surprise that ignorance, repeated failure, learned incompetence, and learned helplessness can be found at different levels in some reforms no matter in the first or second waves.

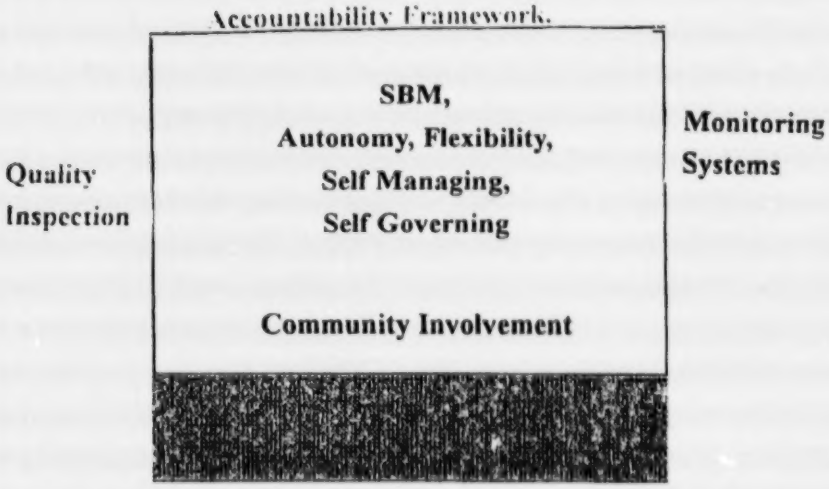
Towards the Third Wave of Education Reform

Hong Kong is now struggling to overcome all types of intelligent, structural, social, political, and cultural constraints and to carry out the ongoing reforms to meet challenges in the new century. As previously analyzed, the characteristics of the second wave in Hong Kong has a strong awareness of future outlook and relevance, even though how the proposed recommendations and strategies are relevant and effective to the future is still unclear. From the analysis of the constraints as well as the international third wave of education reforms, six key implications may be proposed to accelerate the move towards the third wave of education reforms in Hong Kong, of which include "From Tight-loose Coupling Theory to Platform Theory"; "Integration of Central Platform Approach and School-based Approach"; "From Localization to Triplization"; "From Separated Intelligences to Transfer of Multiple Intelligences"; "From Qualified Teachers/Schools to Developing CMI Teachers/Schools."; and "From Site-Bounded Education to Triplization Education."

From Tight-loose Coupling Theory to Platform Theory

Limitations of Tight-Loose Coupling Theory and School-based Approach. In the second wave in Hong Kong or other parts of the world, school-based management, accountability, and quality assurance are strongly emphasized to ensure interface effectiveness. The rationale for school development and improvement is based on the tight-loose coupling theory that encourages school autonomy within a clear accountability framework. This theory implicitly focuses the reform policy efforts mainly on setting up the accountability and quality framework and restructuring school governance but lets schools manage, develop, and function by themselves to meet the expectations and framework at the interface between their schools and the community. (see Figure 1)

Figure 1: Tight-Loose Coupling Theory



This line of thinking is not sufficient to help schools and their students meet the challenges and needs in the future for two reasons. Firstly, as discussed at the beginning of this paper, interface effectiveness is not necessary to be future effectiveness. The expectations of stakeholders are often local and short term and their relationship to the future in a context of globalization and transformation in a new millennium may not be necessary and clear. Therefore, the satisfaction of stakeholders in short-term or middle term is not necessarily relevant to the future needs of students, as well as the whole society, in long term.

And secondly, education should not be assumed as a low-technology and low-intelligence "business" such that every school can use a school-based approach, a labor-intensive approach, or a low-knowledge approach to create a very stimulating and effective environment for learning and teaching. As discussed above, many schools and teachers in Hong Kong are spending a lot of time to do their "home-made" "high-tech" materials for teaching and learning. They are now encouraged very much to form different types of networks for mutual sharing of experiences, ideas, and best practices. Even though it is good, but it is still not much helpful or sufficient to raise the level of knowledge, intelligence, and technology used in education if we believe education in the new millennium should be an intelligence-intensive and technology-intensive endeavor.

In other words, school-based approach is good to promote human initiative at the school level but not sufficient to raise the level of intelligence and technology for education.

Towards Platform Theory. We should give up the tight-loose coupling theory and employ the platform theory if we want to overcome the second wave constraints and start the third wave of education reforms. It means that no matter whether for education

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reforms or school education, they should be based on a high-level intelligent platform with the following functions: (Figure 2)

1. Schools, teachers, and students can save a lot of time and start from a higher level intelligence platform that can provide the state-of-the-art knowledge and technology. They can concentrate their energy and time to use this platform for education, rather than creating from scratch a platform from the lower level. From the spirit of school-based management, they have their flexibility and autonomy to decide how to use the platform more effectively.
2. The platform can provide the critical mass of intelligence and knowledge to generate new intelligence, knowledge, and technology to support education reforms and school education and ensure the relevance of the policy development and educational practice to the future.
3. The platform itself can be individually, locally, and globally networked to expand the critical mass of intelligence, maximize availability of intellectual resources and create numerous opportunities for continuous intelligence development at different levels of education in Hong Kong.

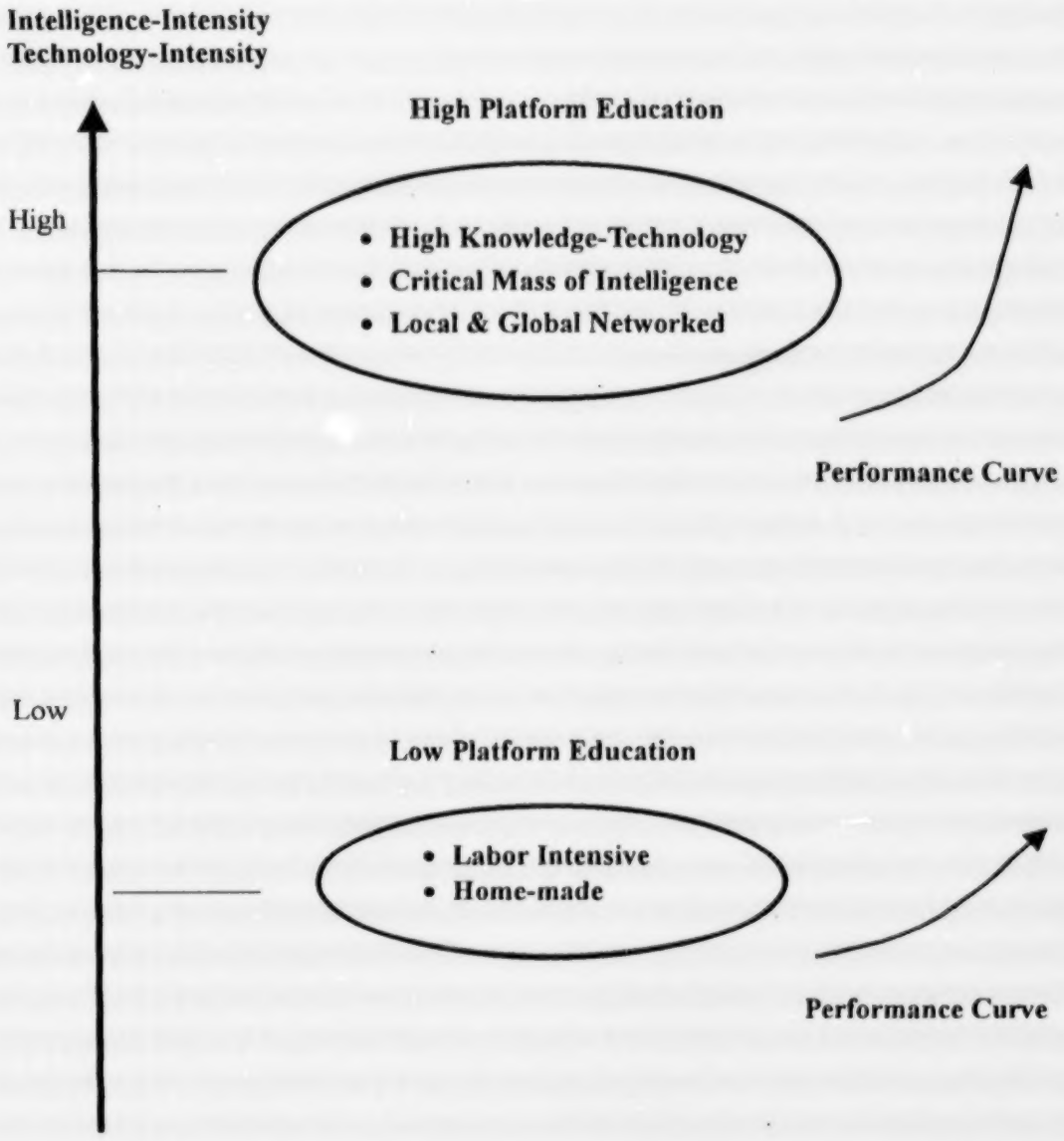
With the support of these functions, the performance of the education systems, schools, and individuals at the higher platform can therefore be more efficiently enhanced than that at the lower platform.

In addition to the intelligent platform, the provision of structural, social, political, and cultural platforms is also very important to education reforms and school management. How to overcome all types of constraints, develop these platforms and facilitate schools and teachers to perform at a high level is really a crucial strategic issue for further exploration in current education reforms in Hong Kong or other parts of the world.

Integration of Central Platform Approach and School-based Approach

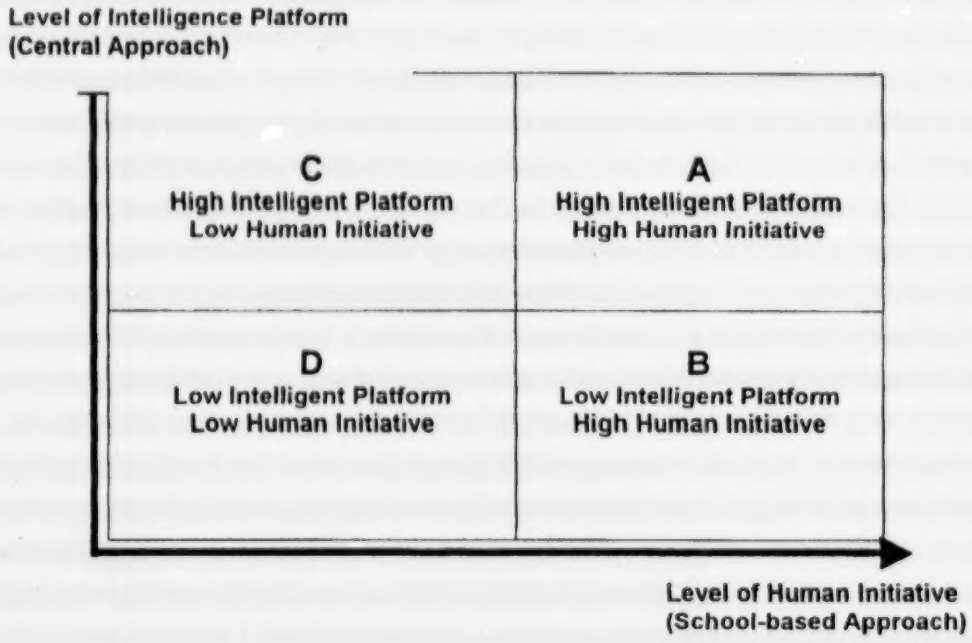
The establishment of sophisticated intelligent platforms is very capital-intensive, intelligence-intensive, and technology-intensive. Clearly it cannot be done by individual schools or using school-based approach. It should be the major task of the Government. It means that in education reforms, both **Central Platform Approach and School-based Approach** are important and necessary. The former is used to raise the level of intelligence, knowledge, and technology used in education and the latter is used to promote human initiative in the process of learning, teaching, and management. Depending on the degrees of using these two approaches, there may be four scenarios for education reforms in the coming years, including Scenario A (High intelligence platform + High human initiative), Scenario B (Low intelligence platform + High human initiative), Scenario C (High intelligence platform + Low human initiative), and Scenario D (Low intelligence platform + Low human initiative), as shown in Figure 3. (The detailed discussion of the characteristics of these scenarios and how schools can be shifted from one scenario to another is to be provided in another paper.)

Figure 2: The Platform Theory



Theoretically or from the past experiences, we should prefer Scenario A, emphasizing both central platform approach and school-based approach. I believe, without the high central platform support, schools will be struggling only at a lower level of intelligence and wasting most of their energy but still unable to meet the demands for high intelligence education in the new century. To a great extent, the central intelligent platform is playing an important leading role to proactively and formatively ensure the level of intelligence, knowledge, technology, and even quality at which schools and teachers are operating. This concept is completely different from the traditional accountability that is based on the tight-loose coupling concept.

Figure 3: Scenarios of Education Reforms



From Localization to Triplization

The rationale of second wave reforms is mainly based on the concepts of localization including decentralization, school-based management, stakeholders' expectations and satisfaction, and accountability to the local community. When compared with the international trends of third wave, the second wave of Hong Kong should move towards the third wave with emphasis on triplization including not only on localization but also globalization and individualization. As discussed at the beginning of this paper, it is hoped that, through globalization in education, reform initiatives can maximize the global relevance and bring in the intellectual resources and support in schooling, teaching, and learning from different parts of the world. Through localization, the local relevance, community support, and resources can be achieved in schooling, teaching, and learning. Also, through individualization, the motivation, initiative, and creativity of students and

teachers can be maximized in schooling, teaching, and learning. As shown in Table 3, there are some implications for education reforms through triplization to achieve unlimited opportunities and multiple global and local resources for learning and development of students and teachers (Cheng, 2000b).

From Separated Intelligences to Transfer of Multiple Intelligences.

From Howard Gardner's (1993) framework of seven human intelligences, including musical intelligence, bodily-kinesthetic intelligence, logical-mathematical intelligence, linguistic intelligence, spatial intelligence, interpersonal intelligence, and intra-personal intelligence, the current education reforms in Hong Kong or other parts of the world emphasize strongly the development of students' multiple intelligences as one of the major new education aims for the future.

Taking the contexts into consideration, my previous paper (Cheng, 2000b) argues that human intelligence should be contextualized and categorized into the following six Contextualized Multiple Intelligences (CMI), including Technological Intelligence, Economic Intelligence, Social Intelligence, Political Intelligence, Cultural Intelligence, and Learning Intelligence. Also, a Pentagon Theory was proposed to develop CMI, promote learning intelligence, and facilitate mutual transfer of multiple intelligences as the core activities of new education. *Intelligence transfer* from one type to other types (e.g., from economic intelligence to political intelligence or social intelligence) should represent the achievement of a higher level of intelligence or meta-thinking. The transfer itself can also represent a type of intelligence creativity and generalization. It is hoped that inter-intelligence transfer can be transformed into a dynamic, ongoing, and self-developing process not only at the individual level but also at the group, institutional, community, society, and even international levels. This will be very important to the creation of a high level knowledge economy, an intelligent society or an intelligent global village. Therefore, it provides a new paradigm to reforming education, curriculum, and pedagogy, of which is different from the traditional thinking of development of separated intelligences.

From Qualified Teachers/Schools to Developing CMI Teachers/Schools.

The success of implementing CMI education for students depends heavily on the quality of teachers and the school. Whether teachers themselves can develop and own a higher level of CMI and whether the school can be a multiple intelligence organization and can provide a MI environment for teaching and learning will affect the design and implementation of CMI education. Therefore, in the reform of school education, how to develop teachers as *Multiple Intelligence Teachers* and schools as *Multiple Intelligence Schools* through staff development and school development inevitably become an important agenda and necessary component.

Table 3: Conceptions and Implications of Triplization

Triplization	Conceptions and Characteristics	Implications for Education Reforms
Globalization	Transfer, adaptation, and development of values, knowledge, technology and behavioral norms across countries and societies in different parts of the world: • Global Networking • Technological, Economic, Social, Political, Cultural, and Learning Globalization • Global Growth of Internet • International Alliances and Competitions • International Collaboration & Exchange • Global Village • Multi-cultural Integration • International Standards and Benchmarks	**To maximize the global relevance, support, intellectual resources, and initiative in schooling, teaching, and learning: e.g.** • Web-based Learning • International Visit/Immersion Program • International Exchange Program • Learning from Internet • International Partnership in Teaching and Learning at group, class, and individual levels • Interactions and Sharing through Video-Conferencing across Countries, Communities, Institutions, and Individuals • Curriculum Content on Technological, Economic, Social, Political, Cultural, and Learning Globalization
Localization	Transfer, adaptation, and development of related values, knowledge, technology, and behavioral norms from/to the local contexts: • Local Networking • Technological, Economic, Social, Political, Cultural, and Learning Localization • Decentralization to the Local Site Level • Indigenous Culture • Community Needs and Expectations • Local Involvement, Collaboration and Support • Local Relevance and Legitimacy • School-based Needs and Characteristics • Social Norms and Ethos	**To maximize the local relevance, community support, and initiative in schooling, teaching and learning: e.g.** • Community Involvement • Parental Involvement & Education • Home-School Collaboration • School Accountability • School-based Management • School-based Curriculum • Community-related Curriculum • Ability Grouping/ Classroom • Curriculum Content on Technological, Economic, Social, Political, Cultural, and Learning Localization
Individualization	Transfer, adaptation, and development of related external values, knowledge, technology, and behavioral norms to meet the individual needs and characteristics: • Individualized Services • Development of Human Potential in Technological, Economic, Social, Political, Cultural and Learning Aspects • Human Initiative and Creativity • Self-actualization • Self-managing and Self-governing • Special Needs	To maximize motivation, initiative, and creativity in schooling, teaching, and learning: e.g. • **Individualized Educational Programs** • **Individualized Learning Targets, Methods, and Progress Schedules** • **Self Life-long Learning, Self Actualizing, and Self Initiative** • **Self Managing Students, Teachers, and Schools** • **Meeting Special Needs** • Development of Contextualized Multiple Intelligences

Note: adapted from Cheng (2000b)

From Site-Bounded Education to Triplization Education.

With the concepts of triplization and contextualized multiple intelligences, there is a clear paradigm shift in education from the traditional site-bounded paradigm towards the new triplization paradigm for the new century. In the new paradigm, students, teachers, and schools can be considered to be triplized: *globalized*, *localized*, and *individualized* during the process of triplization, with the help of the information technology and boundless multiple networkings. Both students and teachers can achieve unlimited opportunities and multiple global and local sources for lifelong learning and development. New curriculum and pedagogy take students as the center of education and facilitate triplized learning and make its process interactive, self-actualizing, discovery, enjoyable, and self-rewarding. They can provide world-class learning for students. Students can learn from the world-class teachers, experts, peers, and learning materials from different parts of the world in any time frame and get local, regional, and global exposure and outlook as a CMI citizen. Some key features of the new and traditional paradigms in learning are summarized in Table 4 for illustration. The detail of the new paradigm in learning, teaching and schooling as contrasted with the traditional paradigm can be found in Cheng (2000b).

Table 4: Two Paradigms for School Education (Student and Learning)

New Triplization Paradigm	Traditional Site-Bounded Paradigm
Individualized Learning: • Student as the Centre • Individualized Programs • Self-Learning • Self-Actualizing Process • How to Learn • Self Rewarding	**Reproduced Learning:** • Student as the Follower • Standard Programs • Absorbing Knowledge • Receiving Process • How to Gain • External Rewarding
Localized and Globalized Learning: • Multiple Sources of Learning • Networked Learning • Life-long and Everywhere • Unlimited Opportunities • World-Class Learning • Local and International Outlook	**School-Bounded Learning:** • Teacher-Based Learning • Separated Learning • Fixed Period and Within School • Limited Opportunities • School Bounded Learning • Mainly School Experiences

Conclusion

This paper has highlighted the three waves of education reforms in both Hong Kong and international contexts. These waves in fact represent three different paradigms to pursue educational effectiveness since the 1980s and earlier. The first wave of reforms

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focus on the *internal effectiveness*; the second wave on interface effectiveness in terms of *education quality* and the third wave on the future effectiveness in terms of *relevance* to the new education functions and new paradigm of education in the new century. Even though this report has pointed out the directions of education reforms and related paradigm shifts, it does not means that education relevance is sufficient and education quality and internal effectiveness are not important anymore. The waves and paradigm shifts just indicate the change of emphasis, focus, and rationale in interpreting the reality and formulating the priority and strategies in education reforms.

The education reforms in Hong Kong or other parts of the world should aim not only at effectiveness and quality but also at relevance to the future. How to ensure and enhance effectiveness, quality, relevance and their mutual linkages should be still a key concern in the current educational changes and developments in Hong Kong, when moving towards the third wave in new century. Hong Kong people are concerned with, on the one hand, whether the existing education system and practices are effective in achieving planned goals at different levels and, on the other hand, whether the quality of school education can satisfy the diverse and high expectations of stakeholders in such a competitive, changing, and demanding environment in which Hong Kong functions. Further, how the educational aims, content, practices, outcomes, and impacts of education are relevant to the developmental needs of individuals and society in the era of globalization and information is a critical and salient issue in current educational reform.

How to overcome the existing intelligent, structural, social, political, and cultural constraints at different levels and build up the necessary intelligent platforms and other platforms to facilitate high performance of schools, teachers, and students at a high level is another important issue. It is expected in the coming education reforms that gradually,

- the platform theory replaces the tight-loose coupling theory;
- the integration of central platform approach and school-based approach replaces the single school-based approach or the accountability approach;
- the triplization movement including globalizaton, localization, and individualization replaces the single localization framework;
- the pentagon theory on development and transfer of contextualized multiple intelligences replaces the emphasis of separated intelligences in education;
- the development of multiple intelligence teachers and schools replaces the traditionally qualified teachers and established schools; and
- the new triplization paradigm of learning replaces the traditional site-bounded paradigm.

The Hong Kong people have shown their strong commitment and effort to education reform for enhancing meaningful social and desirable economic developments in the new century. Even though a number of drawbacks and difficulties would be inevitably encountered in the policy formulation and implementation processes, numerous good opportunities are being created in the second wave and the coming third wave for policy-makers, school practitioners, and educational researchers to pursue educational innovation and effectiveness for the future. Hopefully, the ongoing education experiments, reform experiences, improvement practices, and effectiveness studies at both the school and system levels will not only benefit Hong Kong people, but also make a substantial contribution to the international concern for effectiveness, quality, and relevance in education in the new century.

*Note: Part of the material in this paper was adapted from Cheng (2000a), Cheng, Mok, and Tsui (2000), Cheng (2001b).

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